



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,297	05/17/2005	Ewald Frasl	AT 020067	5849
65913 NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER PHILLIPS, FORREST M	
			ART UNIT 2837	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 04/11/2007	DELIVERY MODE PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Application No.

10/535,297

<b>Applicant(s)</b>	
---------------------	--

FRASL, EWALD

**Examiner**

Forrest M. Phillips

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 1/10/07.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-9,11 have been considered but are moot in view of the new ground(s) of rejection.

Arguments relating to claim 10 are addressed in the rejection statement of claim 10.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballinger et al (Us2351904) in view of Japanese patent 55-92095 hereinafter '095.

With respect to claim 1 Ballinger discloses a membrane (38 in figure 5) for a transducer, which membrane is designed to be capable of vibration with respect to a membrane axis and which has a first membrane side and a second membrane side and which has a middle area, wherein a central cup shaped depression is present in the region of the membrane axis, which depression is bounded by a cup bottom wall and is open towards the first membrane side.

Ballinger does not disclose wherein the membrane is for an electroacoustic transducer, or that the membrane has stiffening grooves.

'095 discloses a membrane for an electroacoustical transducer which membrane is designed to be capable of vibration with respect to a membrane axis and which has a first membrane side and a second membrane side and which has a middle area (see figure 2) wherein a central depression is bounded by a bottom wall and is open towards the first membrane side,

wherein the membrane has stiffening grooves (11 and 12 in figure 3) in its middle area which stiffening grooves extend substantially parallel to radial directions and wherein at least two stiffening grooves of said stiffening grooves extend up to the depression.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '095 with the membrane of Ballinger to have stiffening grooves and the depression to provide the best sound reproduction possible (refer to Ballinger and '95 abstract).

With respect to claim 2 '095 further discloses wherein all of said stiffening grooves are open towards the second membrane side (see figure 2, grooves are seen as two lines with a space in the middle indicating such is the orientation).

With respect to claim 3 '095 further discloses wherein the depression has a connecting channel, which connecting channel is open towards the second membrane side and leads into two stiffening grooves that extend up to the depression. It can be seen from '095 that the grooves (11 in figure 3) extend completely across the membrane, it would have been obvious to one of ordinary skill in the art to apply this

teaching to have a stiffening groove pass through the depression, functioning as a connecting channel.

With respect to claim 4 '095 further discloses wherein the stiffening grooves are angularly regularly spaced in circumferential direction (see figure 3).

With respect to claim 5 '095 further discloses wherein the stiffening grooves are arranged in at least two groups of stiffening grooves, such that the stiffening grooves of a first group extend up to the depression (11) and the stiffening grooves of a second group terminate before reaching the depression (12).

With respect to claim 6 '05 further discloses wherein the stiffening grooves extend with the ends facing away from the depression up to an annular intermediate portion of the membrane (see figures 2 and 3).

With respect to claim 7 '095 further discloses wherein the stiffening grooves extend linearly (see figure 3).

With respect to claim 11 '095 further discloses an electroacoustic transducer having a membrane as described in claim 1 (see figure 2).

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballinger in view of '095 as applied to claim 1 above, and further in view of Japanese patent 402057097 herein after the Japanese patent.

With respect to claim 8 Ballinger as modified discloses the invention as claimed except wherein the stiffening grooves each have grooves walls which are substantially parallel to one another.

The Japanese patent discloses stiffening grooves with substantially parallel sidewalls (see figure 6).

With respect to claim 9 the Japanese patent further discloses wherein the stiffening grooves have a substantially U-shaped cross section (see again figure 6).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of the Japanese patent to have U-shaped grooves with substantially parallel side walls with the grooved membrane of Ballinger as modified to prove a high degree of rigidity to the device while keeping the weight limited (refer to purpose).

The Japanese patent is relied on solely to disclose a desirable stiffening groove configuration.

Claim10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballinger in view of '095 as applied to claim1 above, and further in view of Hoffman.

With respect to claim 10 Ballinger as modified discloses the invention as claimed except wherein the connecting channel has a cross section smaller than the cross-section of the stiffening grooves.

Hoffman discloses grooves in a membrane which are smaller in cross section in the center of a membrane.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Hoffman to have the grooves have a smaller cross-sectional area towards the center of a membrane with the membrane of Ballinger as

Art Unit: 2837

modified for the purpose of having a stiffer central section allowing for better sound reproduction.

Examiner considers the membrane of Hoffman to be analogous to the membrane of Ballinger and '095 and the Japanese patent. While it is true that the membrane is in a mechanical device rather than an electrical device the function is the same.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See form 892.

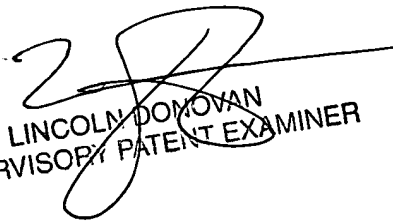
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forrest M. Phillips whose telephone number is 5712729020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 5712721988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FP

  
LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER